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## Pedagogical designs involving social media and implications for students, educators, institutions and researchers

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# **Pedagogical designs involving social media and implications for students, educators, institutions and researchers**

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**Background:** Our research in social media (also, referred to as social software) since 2006 has focused on how emerging technologies can support innovative pedagogy and digital scholarship, for example, blogging and reflective practice; wikis and virtual team collaboration; 3D virtual worlds and training and skills development; social networking tools such as Twitter and Facebook and their role in supporting dialogues amongst academics and researchers, and the role of social software in research skills training and development. Our success in learning and teaching innovations derives from the synergies of the multiple intellectual cultures we have incorporated. Starting from the empirically-grounded, human-centred design principles of Human-Computer Interaction (HCI) and Interaction Design, we have adapted theory and methods from education (e.g. pedagogical theories), social sciences, business, service quality, psychology, knowledge management, and sociology in order to address the needs of students, and of a wide range of stakeholders, including educators, designers, developers, policy makers, and UK external bodies such as JISC, QAA and HEA.

Our teaching and learning innovations in social software since 2006 have been characterised by:

- student-centred pedagogical designs
- ensuring early involvement of key stakeholders including students, educators, instructional designers, technical development team, Library services, and help desk support
- evaluation of the initiative at various stages of the design and development life cycle to ensure that the requirements of different stakeholders are being met
- iterative design and evaluation of the initiative so that the student experience is captured, analysed and incorporated in the re-design or improvement of the initiative
- evidence-based empirical investigation of the initiative resulting in practical outcomes such as guidelines, frameworks, processes, etc. that encompass the overall student experience and which can be taken up by colleagues in other disciplines in their own initiatives.

**About the presentation:** In the **presentation** at the '**International symposium on Informed Design of Educational Technologies - Enhanced Learning and Teaching**', I will discuss the following: the design process for teaching and learning innovations involving social media, challenges for educators in the design, development and evaluation of social software initiatives, the diverse roles that the educators have to perform for efficient and sustainable use of these tools, how knowledge management models can guide the designs of learning spaces involving 2D (web-based) and 3D (e.g. virtual worlds) spaces, the effects on students' learning experiences, skills development and employability, their concerns about interacting with social software tools, advantages that institutions perceive from the use of these tools, concerns of the institutions about sharing of views and information in the public domain, and the challenges perceived by researchers of social software initiatives. I will outline some topics for further research and investigation such as changing role of the educator, learning analytics, and so on.

Our publications are listed at: <http://oro.open.ac.uk/view/person/sm577.html>>

'Handbook of social media for researchers and supervisors; Digital technologies for research dialogues' that was launched in early September 2012 is available: <http://www.vitae.ac.uk/policy-practice/567271/Handbook-of-social-media-for-researchers-and-supervisors.html>>



## Pedagogical designs involving social media and implications for students, educators, institutions and researchers

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The terms social media and social software have been used synonymously.

Social media is an online environment opened for the purposes of mass collaboration; all invited participants can create, post, rate, enhance, discover, consume, and share content without a direct intermediary

Social media is transforming one-way monologues into collaborative dialogues and interactions; *media* implies storage and transmission of messages around and about content; *social* describes the one-to-many and many-to-many conversations.

Social media is enabling the democratising of information and knowledge: it involves everyone, everywhere, in all-the-time conversations.

It helps to weave communities; encourages greater openness and transparency; accelerates information sharing, help to access diverse perspectives; mobilising people; for stimulating collaborative knowledge building and reduce the cost of participation and co-ordination of resources and actions.

Pedagogical design, in this presentation, implies how teaching innovations involving social media can be designed.

Through case studies, I will discuss some examples of pedagogical designs involving social software; what social software can help achieve in terms of learning and teaching; the impact on students, educators and institutions and I will also outline some topics for research in the future.

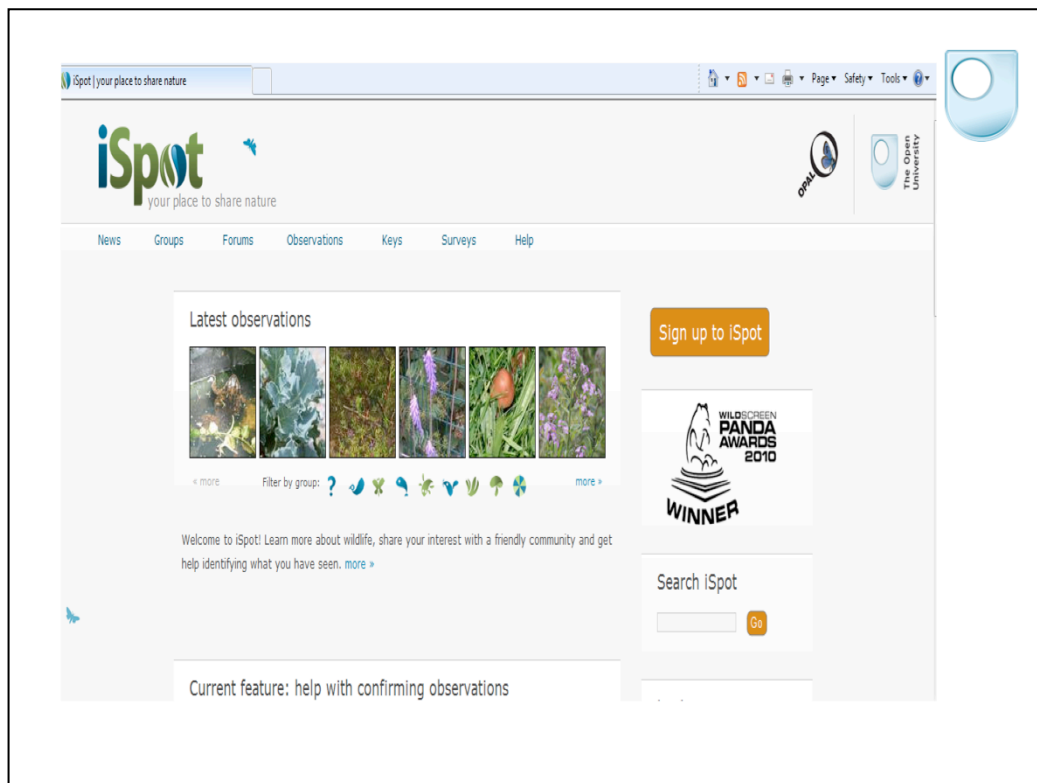


## Social media, Social software or Web 2.0

- Examples are:
  - discussion forums (e.g. in a virtual learning environment such as Moodle), wikis, blogs, 3D virtual worlds (e.g. Second Life), social bookmarking tools (e.g. Delicious), social networking (e.g. Facebook, LinkedIn), photo-sharing site (e.g. Flickr), micro-blogging (e.g. Twitter)
  - students and educators can create, share and access content on the Web within institution's firewalls or in the public domain

These are some examples of social software tools (also, called the Web 2.0 tools).





The website iSpot is an example of participatory learning and informal learning which does not involve social media tools per se but is a nice example of social/mass collaboration primarily via the website.

Refer to <http://www.ispot.org.uk/> and also this paper <http://oro.open.ac.uk/31558/> which describes the role of iSpot in participatory learning about flora and fauna, and in consolidating and creating knowledge.

## Pedagogical design of a social software initiative



- Understanding the pedagogical context
  - rationale for introducing the tool(s)
  - choosing a tool or a combination of tools
  - who are the stakeholders and what are their requirements or perceptions towards the initiative?
  - institution's outlook
- Designing the initiative
  - managing stakeholder relationships
  - designing wrap-around information/materials
  - designing the assessment or the monitoring of progress
  - developing the etiquettes, norms and rules of interaction
  - technical support
- Evaluation

These are three steps of pedagogical design of a social software initiative. These three steps are based around the ISO standard ISO 9241-210, a usability standard that outlines principles for a user-centred design process.

[http://www.iso.org/iso/catalogue\\_detail.htm?csnumber=52075](http://www.iso.org/iso/catalogue_detail.htm?csnumber=52075)

And also <http://www.userfocus.co.uk/articles/iso-13407-is-dead.html> for a commentary on this ISO standard.

The three steps of the design process are: the first step is understanding and analysing the context which involves the points listed in the slide – so, if you are introducing a wiki for collaborative working on a group project, what are the learning outcomes to which this wiki activity is related to? What are the skills that the students will learn? What are the transferable skills that the students will learn? What are the skills that students and the support staff have and what training they would need for interacting with this 'new' technology? How will this training be delivered? So, it is asking a number of questions to justify the choice of the tool to convince oneself and the other stakeholders (including and particularly students). It is also important to check what the institution's outlook is and whether they will support your initiative in terms of providing moral support, technical support, etc. The second step is designing the initiative which includes suggesting resources or pointers to students which further show to the students why the technology being introduced will be useful for them; for example when we introduced wikis in a software engineering course, we included a paper by an IBM practitioner as a part of the study resources. This paper described how wikis and blogs were being used in software engineering practice and it was easy for students to see how by using wikis on the module, they were gaining transferable skills for the industry.

The third and most important step is evaluation and which is elaborated on the next

## Evaluation of a social software initiative



- choosing techniques for evaluation
- evaluating usability of the tools with respect to the learning activities
- pedagogical effectiveness of the tool (did the initiative meet the intended learning outcomes?)
- student experience: learning and engagement
- focus on both success factors and obstacles
- impact on the stakeholders such as educators and tutors, technical support staff in terms of workload, support tasks
- factors that may contribute to the sustainability of the initiative
- generic outcomes/lessons for transferability of the initiative

Evaluation involves the above steps. Evaluation provides the evidence related to the effectiveness of the initiative.

The design (the second step in the previous slide) and evaluation are iteratively carried out – one feeding into the other and sometimes it may take two or three presentations of a module before the running of a social software initiative is stabilised. It is important that the activity of evaluation and feeding back the results of the evaluation in changing the design are planned through and sufficient resources are allocated upfront.

## Our initiatives in social software



- Our initiatives:
  - introduced wikis in a software engineering module and the influence on other modules
  - investigated students' perceptions of blogs in module-directed blogging
  - investigated self-directed blogging by PhD students
  - analysed perceptions of academics and early career researchers towards blogging
  - podcasts and their role in distance education
  - JISC-funded study: 26 case studies in further and higher education in the UK

These are some of the initiatives that we have carried out since 2006.

Our publications include the report and case studies in the JISC-funded project are available in The Open University's repository and at this page:

<http://oro.open.ac.uk/view/person/sm577.html>

*...discussions ... helped me to reflect on my own views and potentially modify them*

*...allowed me to see how the others addressed this question and evolve my own contributions and understanding based on these...*

*... it is only when people get together and discuss the problem that missed opportunities and inconsistencies are identified*

References: <http://oro.open.ac.uk/15756>; <http://oro.open.ac.uk/16144>

These are some of the comments that we received from our students about their perceptions of wikis in a software engineering course where they were collaboratively building the requirements specifications for a computer system in a wiki.

The background is a screen-shot from the wiki.

The references are pointers to our papers related to the wiki initiative in teaching and learning: <http://oro.open.ac.uk/15756>; <http://oro.open.ac.uk/16144>

...it is time consuming to use this tool, as navigation is poor...

...is no substitute for a more interactive communication medium; I would Skype or ... use instant messaging ..., screen sharing and video

.... I organise my studying around my life. Now ... I'm being asked to organise my life around my studying

.... some students just weren't professional and felt they had the right to criticise other students work without being constructive

1. **Chairperson:** responsible for making  
2. **Progress chaser:** responsible for ending  
3. **Secretary:** responsible for updating the  
4. **Planner:** responsible for ensuring that all... and agreed to.

More details on how to use the wiki can be found in the 'Moddle wiki users guide' available from the module website.

References: <http://oro.open.ac.uk/19274>; <http://oro.open.ac.uk/16200>

The background is a screen shot from the wiki and the text highlighted by the red circle shows how we asked students to allocate roles amongst themselves for the 'organised' running of the collaborative activity in the wiki.

The slide shows some of the obstacles that the students reported to us.

The references are pointers to our papers related to the wiki initiative in teaching and learning: <http://oro.open.ac.uk/19274>; <http://oro.open.ac.uk/16200>

... the ideas led me to other roads... when I think ... where did [this course] happen... the location was the collective blogging space

...gets me to think through things ... and I get new insights or ways of expressing things ... it highlights holes in my thinking ... where I have questions...

... I have a problem with study blogs ... I don't think that the institution should feel like it belongs to them

... 'intimidating' ... as 'difficult to develop the right sort of voice'

References: <http://oro.open.ac.uk/29805>; <http://oro.open.ac.uk/19308>

In one of the projects that we carried out in 2007-2009, we investigated students' perceptions of blogging in modules where it is directed as a part of the study resources to use blogging to support their studies.

The comments are from students who were using blogs to write their reflections and to receive comments from their fellow students on a module.

The references are pointers to our papers related to the blogging initiative in teaching and learning: <http://oro.open.ac.uk/29805>; <http://oro.open.ac.uk/19308>

**Audience:** ...the issue of it being available to anybody doesn't excite me very much but the issue of it being available to me when I'm online anywhere is good

**Community:** I wouldn't have written this [material] if it had been in a Word document... it was the fact that it was out there for people to read that drove the whole thing

**Comments:** ... they throw up ... points you may have missed and give alternative views

**Presentation:** before I write down something and put it in the blog I do think a lot, 'oh have I spelt it correctly, does it make sense', and I read it over and over again

References: <http://oro.open.ac.uk/15770>; <http://oro.open.ac.uk/15762>

In one of the projects that we carried out in 2007-2009, we investigated students' perceptions of blogging in modules where it is directed as a part of the study resources to use blogging to support their studies. We found that there were four key factors that influenced students' blogging behaviours: audience, community, comments and presentation. We have developed these factors and probes for questions for each of these factors into a framework which has been reported in one of the papers listed in the references footnote of this slide:

<http://oro.open.ac.uk/15770>; <http://oro.open.ac.uk/15762>



## Blogging by academics and early career researchers



"blogging helps me (...) in connecting me to other people who think about the things I think about. Working in academia can be quite **solitary**, and there isn't always a lot of time for conversation about learning-related issues"

"the way that the blogging has helped me is that its [sic] let me contribute to and be a part of the broader conversation"

"Blogging provides me an outlet for sharing ideas, research, seeking collaborations and otherwise having an efficient, effective platform for communicating with others who share similar interests. I believe without blogging academia would be a much **lonelier pursuit** as very few people who live near me share my interests. I also firmly believe it is infinitely more efficient than the peer review system that takes the better part of a year to share knowledge. We're here to share knowledge, after all."

In another project, we investigated the perceptions of academics and early career researchers towards blogging. The highlighted words in the quotes indicate the affordances of social software tools in supporting sharing, networking and peer reviewing.

## Our approach to pedagogical designs of social software initiatives



- focus on the affordances of the tools: socialisation, collaborative learning and community-building capabilities of emerging technologies
- investigations have been empirically-grounded and within an ethical framework
- stakeholder experiences: perceptions, obstacles
- evaluation techniques from a variety of disciplines but have taken a pragmatic approach
- outcomes have been guidelines, models, frameworks, handbooks

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This slide summarises the key characteristics of our approach in pedagogical designing of social software initiatives in teaching and learning.



## Research Methods

- 26 participants → academic and research bloggers
- Five artefacts collected; five analytical methods

Artefact collected	Analytical method
Pre-interview questionnaire	Quantitative
Unstructured interview	Descriptive phenomenology
Semi-structured interview	Thematic analysis
Blog content (textual)	Discourse analysis (EoC)*
Blog content (visual)	Thematic / saliency analysis

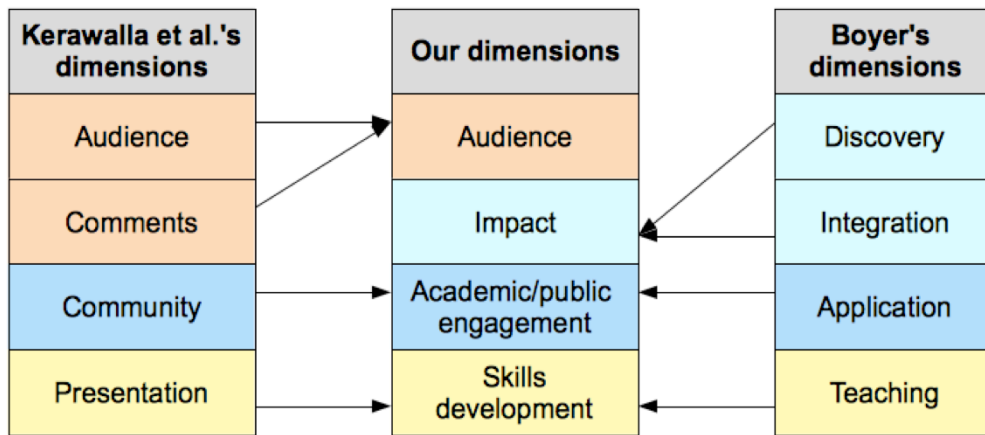
\*ethnography of communication

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This slide reinforces that multiple techniques are sometimes required to evaluate social software initiatives as there are number of artefacts involved and the nature of the technologies is such that there are several artefacts that need to be analysed: for example, bog's textual content, the images in blogs, the writing style and tone in blogs, the comments received from the readers and their effectiveness and the perceptions of the bloggers themselves.

This project has been reported in this paper: <http://oro.open.ac.uk/34241/>

## Dimensions of Digital Scholarship

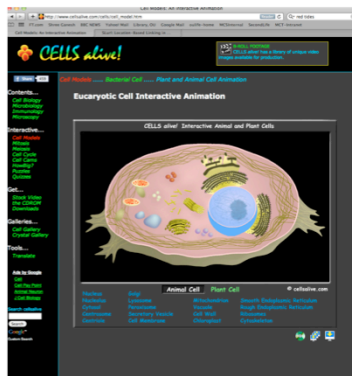


Tania Heap and Shailey Minocha (2012). *An empirically grounded framework to guide blogging for digital scholarship*. *Research in Learning Technology*, 20(Supp.), pp. 176–188. <http://oro.open.ac.uk/34241/>

This slide is to illustrate that along with thorough empirical investigations, our research is influenced by existing models and frameworks in the literature, and the outcomes of our research are empirically-grounded and evidence-based models, frameworks and guidance. The paper that presents our framework of digital scholarship is mentioned in the footer above:

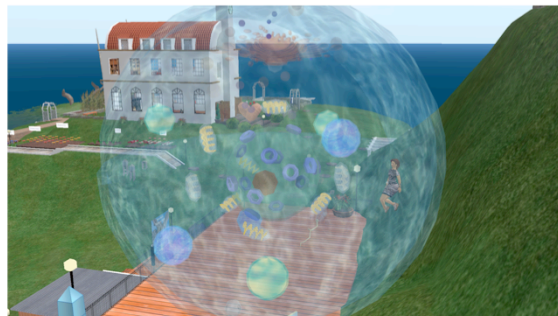
<http://oro.open.ac.uk/34241/>

## Learn through 3D simulations



Learning about an animal cell from a website

Immersive learning by moving around in the cell and its organelles



This is to now discuss our research in 3D virtual worlds and how learning through 3D simulations can be more effective than learning from 2D websites.

## Practise real-life scenarios and unrealistic scenarios



Learn about trauma management  
Get acquainted with the surgical  
equipment and the environment



Studying underwater marine life

This is to show that how 3D virtual worlds such as Second Life can support learning by practising real-life scenarios and also by experiencing situations and events that may be almost impossible to carry out in real life, for example studying about underwater marine life. .



3D virtual worlds also enable users to visit places that they may not be able to do in real life and to network and collaborate with experts from all over the world. This picture is from a guided tour of Stonehenge in Second Life.

## Our initiatives in 3D virtual worlds



- 3D virtual worlds
  - tutorials, student support at a distance, team working in distributed environment
  - training resources for students and staff
  - relationship between pedagogical designs and design of learning spaces
  - usability guidelines for design of learning spaces in 3D virtual worlds
  - guidelines for navigation and wayfinding in 3D virtual worlds
  - how to conduct empirical research in 3D virtual worlds?
  - role in STEM Education (on-going, Wolfson Trust-funded project)

These are some of the projects that we have been involved with in Second Life.




## Interacting in Second Life



References: <http://oro.open.ac.uk/21267/>; <http://oro.open.ac.uk/21538/>

This is a picture of my student and myself having a supervision meeting in Second Life. There are some comments on this life from my students with whom I meet in Second Life for supervision meetings.

The references list some of our publications in the area of 3D virtual worlds and education: : <http://oro.open.ac.uk/21267/>; <http://oro.open.ac.uk/21538/>



...I think an IM [instant messaging] tool would not have allowed the same **sense [of] immersion** as SL...

...I think that this helped us bond as [a] team much better, as it **helped us see more of a person's personality**. Ed [an avatar name] for example was always playing with the toys, firing bubbles .... He [Ed] frequently changed costume.

...It felt almost like I had met my team members but maybe better, because I **could not apply any judgment based on age, appearance, ethnicity etc.** ....**went purely on the merits of their contribution.**

...gives you the feeling that you are actually facing the team... you may be called to answer for your actions, or lack of them

References: <http://oro.open.ac.uk/25204/>; <http://oro.open.ac.uk/23512/>

The comments are from students on a second-level Computing course who employed Second Life for regular projects meetings on a group project that involved developing the requirements and a working prototype of a software system such as the website of a dental practice. The related publications are listed in the footer of the slide and which are: <http://oro.open.ac.uk/25204/>; [http://oro.open.ac.uk/23512](http://oro.open.ac.uk/23512/)

## Blending 2D and 3D learning spaces



<b>socialisation</b> <i>tacit to tacit</i> <i>socialisation in Second Life: introductions, tours; face-to-face meetings</i>	<b>externalisation</b> <i>tacit to explicit</i> <i>course activity in Second Life, or in a classroom setting</i>
<b>internalisation</b> <i>explicit to tacit</i> <i>reflection-on-learning in forums or in Second Life or listening to podcasts</i>	<b>combination</b> <i>explicit to explicit</i> <i>connecting ideas, discussions in wikis, blogs, forums</i>

Shailey Minocha and Dave Roberts (2008). *Laying the Groundwork for Socialisation and Knowledge Construction within 3D Virtual Worlds*, ALT-J, special issue on 'Learning and Teaching in Immersive Virtual Worlds', vol. 16, no. 3, pp. 181-196.  
<http://oro.open.ac.uk/16142/>

How social software technologies can enable learning and knowledge management?

This model is based on the SECI model of knowledge management wherein we showed how 2D and 3D environments can be combined in a learning activity or within a module. A summary of the SECI model and pointers to papers by Nonaka and Takeuchi who proposed this model of organisational knowledge creation is on this page:

<https://amurfalk.oru.se/wiki/moin.cgi/lbmgroupSeciModel>

The reference in the slide is of a paper where we present the background and the rationale of applying the SECI model as a guiding framework for blending 2D and 3D spaces in learning and teaching: <http://oro.open.ac.uk/16142/>



## Success factors in learning and teaching

## Pedagogical, technological and social factors that influence student experience



- pivotal success factor: the educator
- situating the technology within the learning
- clarifying the role of the technology to the students
- ensuring usability of the technology
- providing user guidance and social norms, etiquette
- designing for socialisation in on-line collaborations
- iterative process of evaluation

This slide is a summary of the success factors that we have distilled from our research and practice in social software.

The aspect of socialisation and its signification for collaboration in virtual learning environments is covered in detail in our paper:

<http://oro.open.ac.uk/16142/>



Impact on **students**

## Effects on students' learning, skills development and employability



- collaborative learning; critical reviewing
- reflective learning
- peer-to-peer learning and teaching
- gaining transferable skills
  - reflective practitioner
  - online communication skills
  - team working in a globally distributed environments
  - an online 'portable' portfolio: collation of ideas and resources

References: <http://oro.open.ac.uk/16141/>; <http://oro.open.ac.uk/19270/>

This slide outlines the advantages that students perceive from interacting with social software in their learning. The listed aspects are derived from our research and the key papers are listed in the references footnote:

<http://oro.open.ac.uk/16141/>; <http://oro.open.ac.uk/19270/>



## Concerns **for/about** students

- conflict: learning vs. technology
- diverse mental models, experiences and expectations
- group-working: ownership, assessment
- interacting with tools in the public domain
- employers and prospective collaborators look at the social media profiles of the candidates

References: <http://oro.open.ac.uk/16141/>; <http://oro.open.ac.uk/19270/>

This slide outlines the concerns that students express when interacting with social software in their learning. For example, the personal and professional boundaries are getting blurred; security and privacy breaches, identity theft, online bullying and disclosure of embarrassing personal information, etc.

The listed aspects are derived from our research and the key papers are listed in the references footnote: <http://oro.open.ac.uk/16141/>; <http://oro.open.ac.uk/19270/>





Impact on **educators**

## Implications for educators



- are able to intervene early; student retention
- teaching interactively rather than broadcasting
- able to provide a multi-media and a multi-modal experience to suit different student needs
- the rise of the concept of 'digital or social scholarship':  
*is the practice in which the use of social tools is an integral part of the research and publishing process, [and is characterized by] openness, conversation, collaboration, access, sharing and transparent revision (Cohen, 2007)*

Cohen, L. (2007) Social scholarship on the rise, Blog entry posted to Library 2.0: an academic's perspective  
[http://liblogs.albany.edu/library20/2007/04/social\\_scholarship\\_on\\_the\\_rise.html](http://liblogs.albany.edu/library20/2007/04/social_scholarship_on_the_rise.html) [accessed 19th July 2012]

These are the implications for educators who are employing social software tools in their teaching. Most importantly, some educators are employing social software tools for their digital scholarship activities such as public engagement, disseminating and sharing their research with the community, etc.

## Educator's roles



- pedagogical designs
- technical: installation, on-going support
- training and imparting digital literacy
  - *digital literacy* is the skills, knowledge and understanding that enables critical, creative, discerning and safe practices when engaging with digital technologies in all areas of life
- facilitation and mentoring
- workload issues

References: <http://oro.open.ac.uk/22585/>; <http://oro.open.ac.uk/21464/>

However, the educator's roles are changing the social software landscape. In addition to pedagogical design, they are involved with training, technical support, facilitating online discussions and student-activities and in mentoring. These are causing 'huge' workload issues for educators. We have discussed these aspects in our papers listed in the footnote and which are:

<http://oro.open.ac.uk/22585/>; <http://oro.open.ac.uk/21464/>



Impact on institutions



## Institution's perspective

- tools can help to overcome geographical distance
- student retention
- image building: alumni community
- contribute to employability by showcasing work

References: <http://oro.open.ac.uk/16141/>; <http://oro.open.ac.uk/34271/>

These are some of the advantages that institutions perceive from the use of social software tools. The papers in which we discuss these aspects are listed in the references footnote of the slide and which are:

<http://oro.open.ac.uk/16141/>; <http://oro.open.ac.uk/34271/>



## Concerns of institutions

- tension between the virtual learning environment and the tools in the public domain: control, reliability, firewall
- concerns about support from external organisations
- resource implications
- how to get the 'balance' right between adopters and non-adopters
- appropriateness of the content being posted in the public domain
- how to 'teach' digital professionalism

References: <http://oro.open.ac.uk/34241/>; <http://oro.open.ac.uk/34271/>

These are the concerns of the institutions about employing social software initiatives. We discuss these in our publications listed in the footer:

<http://oro.open.ac.uk/34241/>; <http://oro.open.ac.uk/34271/>



## Research agenda

## Challenges for researchers



- resource-intensive
  - planning and running the initiative
  - cycle of feedback and change in the pedagogical designs has to be built
- influencing disciplines: Education (pedagogical theories), Human-computer interaction, Interaction Design, Usability Engineering, Service quality, Management, Social Sciences, ....
- ethical considerations may be 'unique'
- return on investment in social software initiatives?

References: <http://oro.open.ac.uk/22346/>; <http://oro.open.ac.uk/25134/>

These are the challenges for educational researchers involved in evaluating social software initiatives. We have discussed them at length in our publications listed in the footer: <http://oro.open.ac.uk/22346/>; <http://oro.open.ac.uk/25134/>; also see <http://oro.open.ac.uk/34271/>





## Other issues for further research

- changing role of the educator: content-creator to curator; increased focus on facilitation; sense-making
- impact on face-to-face learning and teaching
- design of learning spaces: blending physical learning spaces, 2D and 3D spaces, mobile Apps
- learning analytics

These are some of the ideas for further research such as learning analytics where students' activities are tracked and analysed and what are the ethical implications; how useful are these traces of students' activities?, etc.

## For further conversations



- Shailey's contact details  
email: [s.minocha@open.ac.uk](mailto:s.minocha@open.ac.uk)  
profile: <http://uk.linkedin.com/in/shaileyminocha>
- Papers and reports on social software, wikis, blogs and 3D virtual worlds on Open Research Online (repository)  
<http://oro.open.ac.uk/view/person/sm577.html>

If you have any queries or comments, please free to contact me on my email: [s.minocha@open.ac.uk](mailto:s.minocha@open.ac.uk).

My LinkedIn profile is at: <http://uk.linkedin.com/in/shaileyminocha> and papers and reports related to our social software research programme are on <http://oro.open.ac.uk/view/person/sm577.html>